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S E C R E T CITE NPIC 6130
USAF FOR AFIGOS
REF: DIAXX-2 6164 APRIL 69
SUBJ: EVALUATION OF GIANT DRAGON MISSION T091 AND SUMMARY OF MISSIONS T090, T091 AND T092.

1. IMAGE QUALITY: THE MASTER CAMERA REPORTEDLY FAILED AFTER THE LEADER FILM CLEARED THE SHUTTLE MECHANISM. AS A RESULT ONLY THE MATERIAL FROM THE SLAVE CAMERA WAS RECEIVED. THE IMAGE QUALITY PROVIDED BY THE SLAVE CAMERA RANGES FROM POOR TO FAIR. AN OVERALL OUT-OF-FOCUS APPEARANCE IS EVIDENT THROUGHOUT THE MISSION. THE BEST GROUND RESOLUTION IS APPROXIMATELY [redacted] AND THE AVERAGE RESOLUTION IS APPROXIMATELY [redacted] IMAGE SMEAR AND DOUBLE IMAGERY ARE PRESENT INTERMITTENTLY THROUGHOUT THE MISSION. CLOUD COVER AND HAZE OBSCURE APPROXIMATELY 15 PERCENT OF THE MISSION.   25X1   25X1

2. MISSION DATA
   A. MISSION NUMBER: T091
   B. DATE: 21 MARCH 1969
   C. CAMERA NUMBERS
      (1) MASTER: I11
      (2) SLAVE: UNREADABLE, THE IMAGE IS SEVERELY BLOOMED.
   D. FLIGHT TIMES: T/OFF 0030Z C/ON 0055Z
   E. FILM: 3404
   F. EXPOSURE: 1/225
   G. APERTURE: F 3.5
   H. FILTER: MINUS BLUE
   I. PROCESSED BY: NOT AVAILABLE.
   J. AVERAGE GAMMAS: NOT AVAILABLE.

3. ORIGINAL NEGATIVE
   A. EXPOSURE: THE FIRST HALF OF THE MISSION APPEARS PROPERLY EXPOSED, WHEREAS THE SECOND HALF IS SLIGHTLY OVEREXPOSED.
   B. DENSITY AND CONTRAST: THE DENSITY IS GENERALLY MEDIUM FOR THE FIRST HALF OF THE MISSION AND GRADUALLY INCREASES THEREAFTER. THE CONTRAST IS GENERALLY MEDIUM.
   C. IMAGE DEGRADATIONS
      (1) MASTER: NOT APPLICABLE.
      (2) SLAVE: TH FIRST, THIRD AND LAST FRAME OF THE MISSION CONTAIN FOG PATTERNS ASSOCIATED WITH CAMERA START-UP AND SHUT-DOWN. BANDING IS PRESENT ON THE FIRST XXXXXX TWO TO THREE INCHES OF EVERY FRAME, AND VERY OFTEN THROUGHOUT THE ENTIRE FORMAT (EXAMPLES: FRAMES 63-65 AND 267-270).
   D. PHYSICAL DEGRADATIONS:
      (1) MASTER: NOT APPLICABLE.
      (2) SLAVE: A MANUFACTURER'S SPLICE IS PRESENT IN FRAME 453 AND HEAT SPLICES ARE LOCATED BETWEEN FRAMES 149/150 AND 184/185. MULTIPLE LONGITUDINAL EMULSION SCRATCHES ARE PRESENT ON THE FIRST 540 FRAMES. SEVERE BASE SCRATCHES AND ABRASIONS ARE PRESENT THROUGHOUT PART THREE (FRAMES 361-540) INCLUDING THE HEAD AND TAIL IDENTS.
   E. AUXILIARY DATA: THE EVENTS COUNTER AND CAMERA SERIAL NUMBER ARE IMAGED THROUGHOUT. THE CAMERA SERIAL NUMBER IS SEVERELY BLOOMED.
   F. THE LAST TITLED SLAVE CAMERA FRAME IS 1140.

4. A SUMMARY OF IMAGE QUALITY DEGRADATIONS ON MISSIONS T090, T091 AND T092 IS PRESENTED BELOW ALONG WITH POSSIBLE

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	REPRO	
	AID	
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	PROD	
	SCIDN	
	NAST	
	XXS	
	PGM	
	IAS	
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25X1

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CAUSES FOR THESE DEGRADATIONS.

A. THE IMAGERY FROM BOTH CAMERAS, FROM ALL THREE MISSIONS, HAS AN OUT-OF-FOCUS APPEARANCE. THIS DEGRADATION CAN RESULT FROM A NUMBER OF CAUSES; HOWEVER, THE MOST PROBABL ARE: (1) INSUFFICIENT TIME FOR THE CAMERAS TO STABILIZE AT THE PROPER TEMPERATURE PRIOR TO CAMERA OPERATION. ON ALL THREE FLIGHTS THE CAMERAS WERE TURNED ON APPROXIMATELY 23 MINUTES AFTER TAKE-OFF, (2) THE CAMERAS ARE SET FOR OPTIMUM FOCUS AT A SPECIFIC TEMPERATURE. IF THIS TEMPERATURE WAS NOT ACHIEVED OR WAS SURPASSED, AN OUT-OF-FOCUS CONDITION COULD EXIST, (3) HIGH FREQUENCY VIBRATION CAUSED BY FINE TUNING OF THE AUTOMATIC PILOT. IT IS REALIZED THAT THIS SITUATION DOES NOT AFFECT FOCUS; HOWEVER, THE RESULTANT IMAGERY HAS AN APPEARANCE WHICH IS SIMILAR TO IMAGERY THAT IS OUT-OF-FOCUS, (4) THE CAMERAS ARE OUT-OF-FOCUS.

B. IMAGE SMEAR IS PRESENT INTERMITTENTLY ON BOTH CAMERA RECORDS FROM ALL THREE MISSIONS. THIS DEGRADATION APPEARS TO BE THE RESULT OF VEHICLE MANUEVERS WHICH PRESUMABLY CANNOT BE ELIMINATED.

C. DOUBLE IMAGERY IS PRESENT INTERMITTENTLY ON THE SLAVE CAMERA RECORDS FROM ALL THREE MISSIONS. AGAIN, THIS DEGRADATION CAN RESULT FROM A NUMBER OF CAUSES; HOWEVER, THE MOST PROBABLE ARE: (1) THE SCAN ARM ASSEMBLY IS BINDING DURING SCAN; I.E., ERRATIC MOVEMENT OF THE SCAN ARM, (2) A LOOSE ELEMENT IN THE LENS CELL ASSEMBLY, (3) LOW FREQUENCY VEHICLE VIBRATION DURING SCAN, (4) INSUFFICIENT FILM TENSIONS CAUSING FILM MOVEMENT DURING SCAN. OF THESE FOUR POSSIBLE CAUSES THE FIRST SEEMS MOST LIKELY BECAUSE OF THE PRESENCE OF BANDING THROUGHOUT THE FORMAT OF MANY SLAVE CAMERA FRAMES WHICH IS AN INDICATION OF ERRATIC SCAN ARM MOVEMENT.

E. THE EXPOSURE ON MISSIONS TØ9Ø AND TØ92 RANGES FROM APPROXIMATELY ONE-HALF STOP UNDEREXPOSED AT THE BEGINNING OF THE MISSIONS TO APPROXIMATELY ONE-FULL STOP OVEREXPOSED AT THE END OF THE MISSION. THE EXPOSURE ON MISSION TØ91 RANGES FROM ADEQUATE AT THE BEGINNING OF THE MISSION TO APPROXIMATELY ONE-HALF STOP OVEREXPOSED AT THE END OF THE MISSION. THIS SYSTEM DOES NOT HAVE AN IN-FLIGHT EXPOSURE CHANGE CAPABILITY, THEREFORE THE EXPOSURE IS ACCEPTABLE UNDER THESE CONDITIONS.

F. THE PROCESSING OF THE ORIGINAL NEGATIVE IS GOOD.

G. PHYSICAL DEGRADATIONS (SCRATCHES, ETC.) ARE GENERALLY

[redacted]
OF A MINOR NATURE.

5. IN SUMMARY, THE IMAGERY OBTAINED IS NOT COMPARABLE TO THE QUALITY WHICH IS EXPECTED AND HAS BEEN OBTAINED FROM THE DELTA III CAMERA SYSTEM. THE MANUFACTURER RECOMMENDS REFURBISHMENT OF THE CAMERA AFTER 1ØØ,ØØØ CYCLES. IF THIS CYCLE RATE HAS BEEN EXCEEDED, IT MAY BE IN YOUR BEST INTEREST TO COMMIT THE UNIT FOR MANUFACTURER MAINTENANCE.

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--END OF MESSAGE--